

### REMARKS

Claims 1, 3-7, 9-11, 13-15, 18, 22, 23 and 24 remain in the application. Claims 2, 8, 12, 16-17, and 19-21 were previously canceled without prejudice. Claims 1 and 13 are hereby amended. No new matter is being added.

### Claim Objections

Claim 13 is hereby amended in accordance with the Examiner's recommendation to correct its dependence. Hence, applicant respectfully submits that this objection is now overcome.

### Claim Rejections -- Sections 102 and 103

Claims 1, 3-4, 7 and 9-10 stand rejected as being anticipated by Grigor et al (US Patent 6,023,281). Claims 5-6 stand rejected as being unpatentable over Grigor in view of Horstmann et al (US Patent 6,125,433). Claims 11, 22, and 24 stand rejected as unpatentable over Grigor in view of Koenen (US 2004/0019891). Claims 13-15 and 18 stand rejected as unpatentable over Grigor in view of Koenen and further in view of Horstmann. Claim 23 stands rejected as unpatentable over Grigor in view of Elnozahy. (U.S Patent 6,701,421). Hence, all the pending claims stand rejected based on Grigor or Grigor in combination with one or more other references. Applicant respectfully traverses these rejections in relation to the claims as hereby amended.

Claim 1 has been amended and now recites as follows.

1. A method of rapidly selecting a physical memory locality **in response to a memory fault event** to accomplish efficient memory allocation in a multiprocessor system which includes a plurality of cells and shared memory distributed across the cells, wherein each cell including at least a portion of the shared memory, the method comprising:

**receiving from a requesting processor in one of said cells a request to  
access a virtual memory address;  
checking for a translation of said virtual memory address to a  
corresponding physical address; and  
if said translation is not found, then performing steps of:**  
sending a locality request to a virtual memory fault handler, the locality  
request including an indication of a search policy to use from among a  
plurality of search policies;  
forming a data structure based on physical memory localities at the cells  
within the system and the search policy that was indicated, said data  
structure including sets of equidistant physical memory localities from  
said requesting processor; and  
selecting a preferred physical memory locality using a pointer to a locality  
within said data structure.

(Emphasis added.)

As shown above, amended claim 1 now requires “receiving from a  
requesting processor in one of said symmetric multiprocessing nodes a request  
to access a virtual memory address; checking for a translation of said virtual  
memory address to a corresponding physical address; and if said translation is  
not found, then performing steps of ....” These added limitations expressly limit  
the method of the claimed invention to **performing steps “in response to  
handling a memory fault event” in which a translation from a virtual  
memory address to a corresponding physical address is not found.**  
Support for these limitations is found in the original application, for example, at  
page 7, lines 28-33.

In contrast, the citation to column 4, lines 32-62 of Grigor pertains to a  
memory mapping convention where memory is allocated between processing  
elements using upper and lower addressing boundaries. Neither this citation to  
Grigor, nor the other cited references, disclose or suggest the claimed method  
which provides an innovative procedure for responding to a memory fault event.

For example, neither Grigor nor the other cited references discloses or suggests **“sending a locality request ... including an indication of a search policy from among a plurality of search policies.”** No such disclosure or teaching of a **request** indicating a search policy from among a **plurality of search policies** is found in either Grigor or the other cited references.

In addition, neither Grigor nor the other cited references discloses or suggests **“forming a data structure based on ... the search policy that was indicated ... including sets of equidistant physical memory localities from said requesting processor.”** No such disclosure or teaching of forming such a **data structure with sets of equidistant localities** is found in either Grigor or the other cited references.

Finally, neither Grigor nor the other cited references discloses or suggests **“selecting a preferred physical memory locality using a pointer to a locality within said data structure.”** No such disclosure or teaching of using a **pointer** is found in either Grigor or the other cited references.

For at least the above-discussed reasons, applicant respectfully submits that amended claim 1 now overcomes its rejection.

Claims 3-7, 9-10, and 23 depend from claim 1. Hence, applicant respectfully submits that claims 3-7, 9-10, and 23 now also overcome their rejection for at least the reasons given above in relation to claim 1.

Independent claim 11 has similar limitations as the limitations discussed above in relation to claim 1. In particular, claim 11 recites that **“the VM locality module is configured to receive a locality request from the VM fault handler, the locality request including an indication of a search policy to use from among a plurality of search policies, and is further configured to form a data structure based on the search policy that was indicated.”** (Emphasis added.) As such, applicant respectfully submits that, for similar reasons as

discussed above in relation to claim 1, claim 11 also overcomes its rejection based on Grigor.

Claims 13-15, 18, and 24 depend from claim 11. Hence, applicant respectfully submits that claims 13-15, 18, and 24 also overcome their rejection for at least the reasons given above in relation to claim 11.

Claim 22 has similar limitations as the limitations discussed above in relation to claim 1. In particular, claim 22 recites that **“a virtual memory locality module configured to receive a locality request from the virtual memory fault handler, to form a data structure having sets of equidistant physical memory based on a search policy indicated in the locality request, ....”** (Emphasis added.) As such, applicant respectfully submits that, for at least the same reasons as discussed above in relation to claim 1, claim 22 also overcomes its rejection based on Grigor.

Conclusion

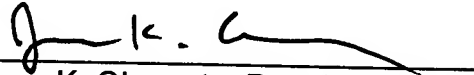
For at least the above reasons, it is believed that the pending claims now overcome the rejections given in the latest office action and are now in form for allowance. The Examiner is invited to telephone the undersigned at (408) 436-2111 for any questions.

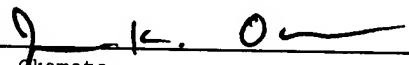
If for any reason an insufficient fee has been paid, the Commissioner is hereby authorized to charge the insufficiency to Deposit Account No. 08-2025 (Hewlett Packard).

Respectfully submitted,  
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Typed or Printed Name:	James K. Okamoto	Dated:	September 25, 2007